



COMEDIA

Intelligent Network Audio Loudspeaker Amplifier

PRODUCT DETAILS





GlenSound Electronics Ltd

Thank you for choosing a new GlenSound product.

All rights reserved.

Information contained in this manual is subject to change without notice, if in doubt please contact us for the latest product information.

If you need any help with the product then we can be contacted at:

GlenSound Electronics Ltd
The Design Buildings
1 – 6 Brooks Place
Maidstone
Kent
ME14 1HE
United Kingdom

Telephone: +44 (0) 1622 753662

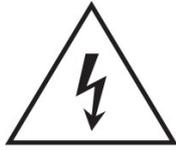
EMAIL ADDRESSES

General enquires: office@glenSound.com

Technical enquires: techinfo@glenSound.com

Sales enquires: sales@glenSound.com

IMPORTANT SAFETY INSTRUCTIONS



This symbol is intended to warn that dangerous voltages within the product are present and constitute a risk of electric shock.

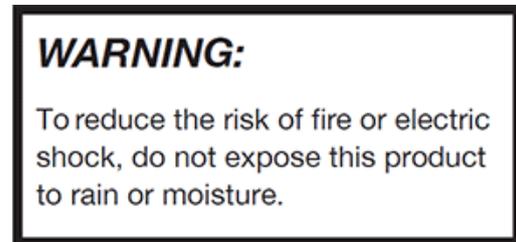
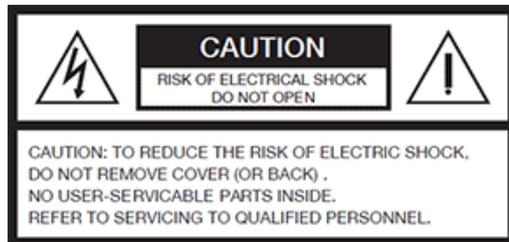


This symbol is intended to highlight that there are important operating & maintenance instructions in the literature accompanying this unit.

- 1) Read these instructions
- 2) Keep these instructions
- 3) Heed all warnings
- 4) Follow all instructions
- 5) Do not use this apparatus near water
- 6) Clean only with a dry cloth
- 7) Do not block any ventilation openings. Install in accordance with manufacturer's instructions
- 8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat
- 9) Do not defeat the safety purpose of the polarized or grounding type plug. A polarized plug has 2 blades with one wider than the other. A grounding type plug has 2 blades and third grounding prong. The wider blade or the 3rd prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet
- 10) Protect the power cord from being walked on or pinched, particularly at plugs, convenience receptacles and the point where they exit from the apparatus
- 11) Only use attachments/ accessories specified/ supplied by the manufacturer
- 12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/ apparatus combination to avoid injury from tip over



- 13) Unplug this apparatus during lightning storms or when unused for long periods of time
- 14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped
- 15) Do not attempt to modify this product. Doing so could result in personal injury and/ or product failure



PRODUCT WARRANTY

All equipment is fully tested before dispatch and carefully designed to provide you with trouble free use for many years.

We have a policy of supporting products for as long as possible and guarantee to be able to support your product for a minimum of 10 years.

For a period of one year after the goods have been despatched the Company will guarantee the goods against any defect developing after proper use providing such defects arise solely from faulty materials or workmanship and that the Customer shall return the goods to the Company's works or their local dealer.

All non-wear parts are guaranteed for 2 years after despatch and any defect developing after proper use from faulty materials or workmanship will be repaired under this warranty providing the Customer returns the goods to the Company's works or their local dealer.



EU DECLARATION OF CONFORMITY

GS-COMEDIA

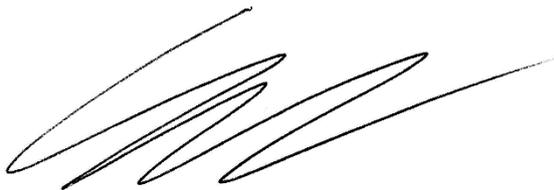
Intelligent Network Audio Loudspeaker Amplifier

This declaration of conformity is issued under the sole responsibility of the manufacturer.

This equipment is manufactured by Glensound Electronics Ltd of Brooks Place Maidstone Kent ME14 1HE is  marked and conforms to the following Union harmonisation legislation:

Emissions:	BS EN55032:2015
Immunity:	BS EN55035:2017

Signed for and on behalf of Glensound Electronics Ltd.



Gavin Davis, Managing Director
Maidstone, Kent, England

Date: 05/11/2020

RoHS DIRECTIVE

RoHS 2 Directive 2011/65/EU restricts the use of the hazardous substances listed below in electrical and electronic equipment.

This product conforms to the above directive and for these purposes, the maximum concentration values of the restricted substances by weight in homogeneous materials are:

Lead	0.1%
Mercury	0.1%
Hexavalent Chromium	0.1%
Polybrominated Biphenyls	0.1%
Polybrominated Diphenyl Ethers	0.1%
Cadmium	0.01%

WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT REGULATIONS 2006 (WEEE)

Glen sound Electronics Ltd is registered for business to business sales of WEEE in the UK our registration number is:

WEE/JJ0074UR

GLENSOUND COMEDIA

HANDBOOK CONTENTS

<u>Description</u>	<u>Issue 1</u>	<u>Page No.</u>
Contents		
IMPORTANT SAFETY INSTRUCTIONS.....		3
PRODUCT WARRANTY.....		4
EU DECLARATION OF CONFORMITY.....		5
RoHS DIRECTIVE.....		6
WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT REGULATIONS 2006 (WEEE).....		6
HANDBOOK CONTENTS.....		7
OVERVIEW.....		8
COMEDIA REAR PANEL LAYOUT.....		9
COMEDIA FRONT PANEL LAYOUT.....		9
DAY TO DAY OPERATION (and hidden functions).....		11
1. Selecting a Source.....		11
2. Front panel volume control.....		11
3. Input trim control.....		11
4. Source select LEDs.....		12
5. LED PPM mode.....		12
AUDIO BLOCK DIAGRAM (analogue representation of digital circuits).....		13
CONNECTING THE COMEDIA UNIT TO A DANTE NETWORK.....		14
Getting Dante Controller.....		14
Connecting Comedia device to the network.....		14
Audio Over IP Network.....		14
Running Dante Controller.....		15
Dante Controller TIP.....		15
Device not showing up in Dante Controller.....		16
AES67 MODE.....		17
Turning On AES67 Mode.....		17
Sending AES67 Audio.....		18
Receiving AES67 Audio.....		19
AES67 Restrictions.....		19
GLENSOUND CONTROLLER.....		20
Installing the app.....		20
Note:.....		20
Uninstalling the app.....		20
Using the app with the Comedia.....		21
UPDATING FIRMWARE.....		23
Instructions.....		23
UPDATING THE ULTIMO CHIPSET.....		25
Finding Out Current Installed Version.....		25
Finding Out What The Latest Available Version Is.....		25
Updating the device.....		25
WIRING INFORMATION.....		26

2-Way Terminal Block Wiring.....	26
3-Way Terminal Block Wiring.....	26

OVERVIEW

The Comedia is a network audio loudspeaker amplifier powered by Power over Ethernet (PoE) and boasts the very latest low noise high output class D power amplifier.

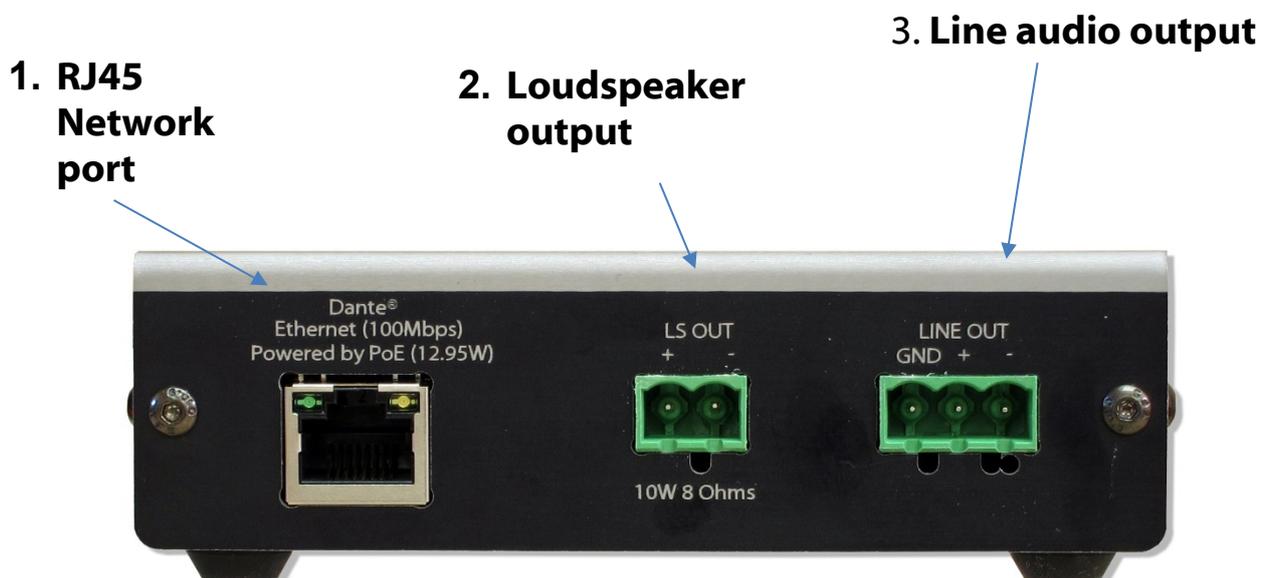
Internally a Digital Signal Processor (DSP) takes careful care of the audio signals, including state of the art compression and limiting circuits. Control of setup and day to day operation of the Comedia is also available on our Windows 10 application GlenSound Controller including the ability to group multiple Comedia's together and control their level simultaneously. The rugged and lightweight aluminium enclosure has holes to allow for wall or ceiling mounting.

Comedia can receive up to four Dante (AES67 compliant) audio over IP (AoIP) inputs. These inputs can be selected by the user on front panel with a button and four leds to indicate the channel. The four audio inputs can also be easily mixed together and their individual levels adjusted.

A priority system is provided to allow one (or more) of the inputs to automatically duck another. This can be very useful if you want to monitor one source but also listen to another when audio is present, such as sending show relay to dressing rooms in a theatre but having the stage managers call and building fire alarm take precedence when they're active.

Different preset EQs and an LF cut can all be set in the user menu to allow the Comedia to be used for a variety of applications.

COMEDIA REAR PANEL LAYOUT



1. RJ45 Network port

This is a standard 100Mbps ethernet IP interface that allows connection to a Dante network with LED indicators for PoE and network activity. The PoE source used to power the device can be a mid-span adapter or a network switch with PoE. The PoE source must also be able to provide at least 15.4 Watts on the output that the Comedia is connected to.

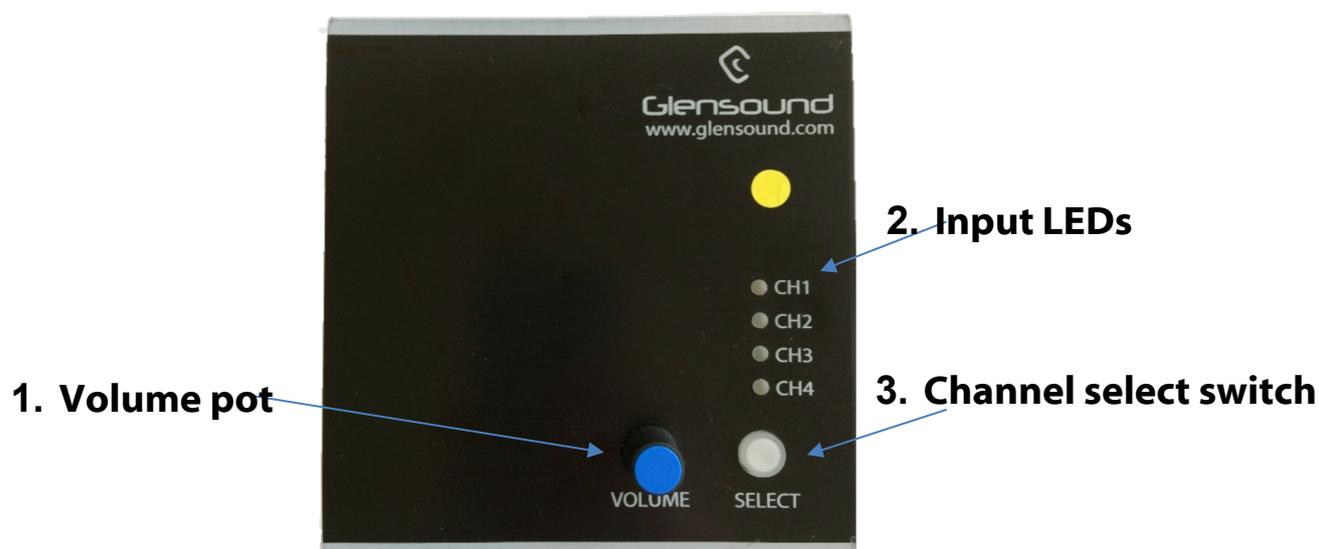
2. Loudspeaker output

This two-way 5.08mm pitch male terminal block connector presents the loudspeaker outputs. The internal class D amplifier provides 10W of power into an 8 Ohm load.

3. Line audio output

The three-way 5.08mm pitch male terminal block connector has a line level audio output which is a mirrored signal of the loudspeaker output.

COMEDIA FRONT PANEL LAYOUT



1. Volume pot

The volume control is used for adjusting the loudness/ volume of the loudspeaker. Turning it clockwise increases the volume and anti-clockwise reduces the volume.

It can also be used in conjunction with the select switch to adjust the gain of any of the input channels. (see Day to Day Operation...Input Trim Control for further details).

Using Glensound Controller it is possible to set a minimum and/ or maximum output level from the loudspeaker. This will mean that although the operator can turn the volume control all the way up or down the actual output level may be being limited by the menu setting.

NOTE: It is possible to completely disable the volume control in the GlenController. If it has been disabled then when it is rotated all the input LEDs will flash red to warn the user that the control is disabled.

2. Input LEDs

The 4 input LEDs main role is to indicate which channel(s) is/ are currently being routed to the loudspeaker output. Whichever channels' LED(s) is/ are on indicate which network audio input(s) is/are being routed to the loudspeaker output.

The LEDs can also be set in the menu system to act as a PPM (either individually, or as a column). If in the mode then they will illuminate to indicate audio level, and the currently selected channel(s) LED will not be shown, unless the Select switch is pressed.

If all the LEDs flash red, then this provides an indication to the user that the current control they are operating (select switch or volume control) has been locked from within the menu system.

3. Channel select switch

The select switch has two main functions.

A) Each single press of the switch will scroll to the next available input channel(s), the currently selected channel(s) will be highlighted by the LEDs.

B) Pressing and holding the select switch will enable the currently selected input channel to have its gain adjusted by +/-16dB by using the front panel volume control. While the switch is being held down the inputs LED will turn orange to indicate that you are in the gain trim mode.

NOTE: It is possible to disable the select switch within in the menu system in Glensound Controller. If when you press the switch the input LEDs flash red, then this indicates that the switch has been disabled and the user cannot scroll through the input channels

DAY TO DAY OPERATION (and hidden functions)

1. Selecting a Source

Pushing the select switch will scroll the input source to the next available input (note available inputs can be set in the menu system).

If Sum (mixing) is enabled, then the enabled sum options will be scrolled through after the individual inputs.

The select switch can be disabled in the menu system, if it has been disabled then if pressed it and all the front panel source LEDs will all flash red.

2. Front panel volume control

The volume control adjusts the output volume of the loudspeaker.

There are a few possible settings for the volume control that can be set in the menu system in Glensound controller.

1) The volume control can be disabled.... i.e. the volume that it was set at when it was disabled will become fixed and turning the control up or down will not affect the output volume.

If it has been set as disabled when it is rotated the 4 input source LEDs will flash red to indicate a warning to the user that it is fixed.

2) It is also possible to set within the menu system a minimum (Min) volume.

This means that when the volume control is turned fully anti-clockwise it will not fully attenuate the volume and the source audio can never be completely turned off.

3) It can be used in conjunction with the source select switch to adjust a particular inputs level (see Input trim control).

Note if it has been used in this way then it must be turned to its previous volume position before it will again start effecting the output volume of the loudspeaker.

3. Input trim control

This function allows an individual input to have its level adjusted.

When a single channel is selected, press and hold the select button to trim the gain using the front panel volume pot (not available in channel sums).

The channel LED will show in orange, and the pot can then be used to set the gain value +/-16dB.

Note: On exit (i.e. once the channel select button has been released) the volume control reverts to the normal volume control but will only become active when turned to the current volume level. For example, if the volume was 3 before entering gain

trim, and the volume control is moved to 10 in gain trim, on exit the volume will remain at 3 until the pot is turned back to 3 again.

4. Source select LEDs

The source select LEDs are used to show various states of the system including metering.

- 1) When yellow they indicate which of the sources is currently being routed to the loudspeaker output.
- 2) If all flash red, then this indicates that the current control that is being operated has been disabled in the menu (select switch or volume pot)
- 3) If one LED indicates red, while another becomes dimmer, this indicates that the priority mode is currently active. The dimmed yellow LED indicates the currently selected audio channel and the brighter red LED indicates the priority channel that is currently receiving audio and is active and will be ducking the audio of the selected channel.

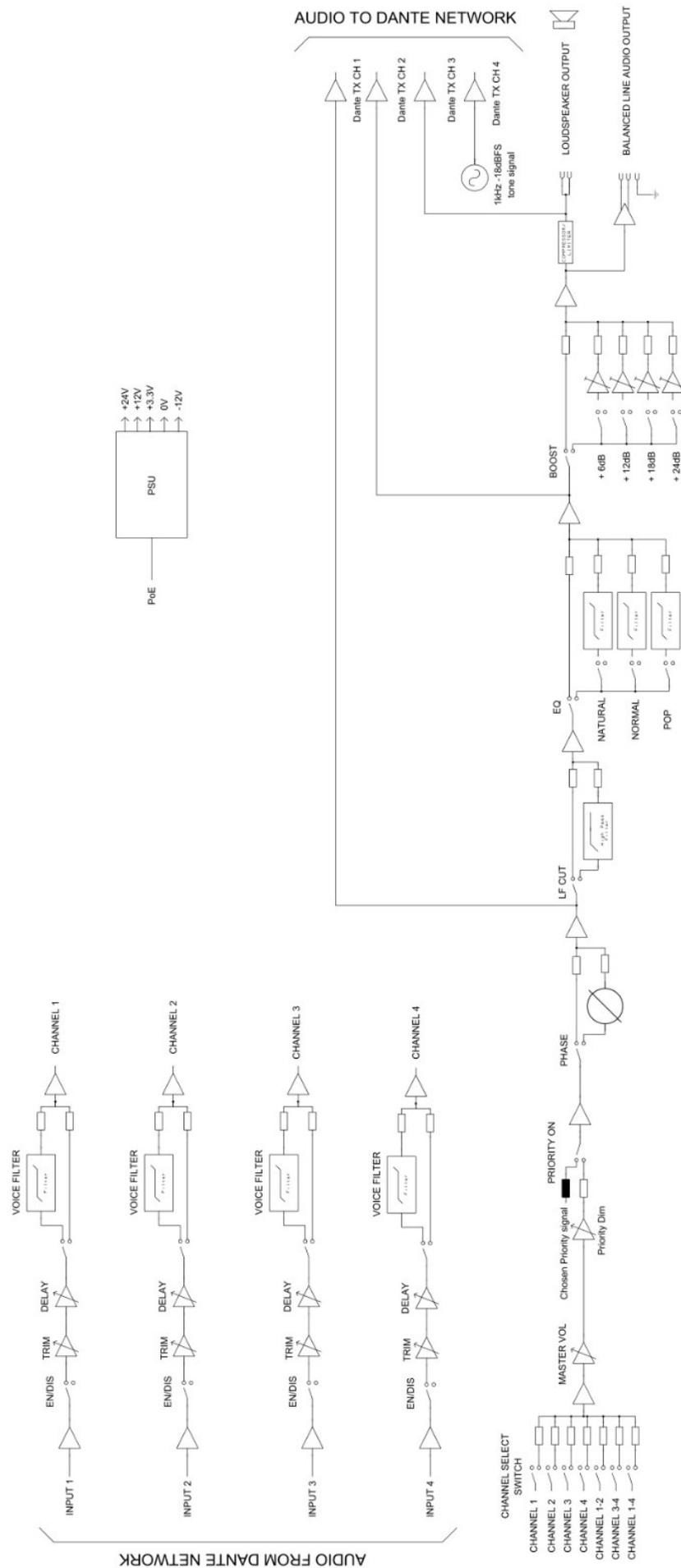
5. LED PPM mode

It is possible to enable two different Peak Programme Meter (PPM) modes in the menu.

'Bar' mode makes the 4 source LEDs work as a traditional meter, showing the output level of the currently selected source.

'Colour' mode makes the selected LED change colour to indicate its own source level. Whereby Blue = on with no audio, through green, yellow, then red to indicate high level.

AUDIO BLOCK DIAGRAM (analogue representation of digital circuits)



CONNECTING THE COMEDIA UNIT TO A DANTE NETWORK

The Comedia are network audio devices utilizing the reliable and versatile Dante audio over IP protocol. Dante is a proprietary system (although very widely used) the originators of which are Audinate.

The information below is only meant as a very basic guide. Full details of the power of Dante network audio and instructions for using it can be found at www.audinate.com

Getting Dante Controller

If you are connecting the Comedia to a new Dante network the first thing you will need to do is to get the free Dante controller software from Audinate. This can be downloaded by visiting Audinate's web site at www.audinate.com

Connecting Comedia device to the network

The Comedia can be connected to the network that you are going to use for your audio distribution simply by plugging in to the RJ45 network connections on the rear. Once connected to the network it will be possible to see the Comedia from within the Dante controller and route its' audio circuits.

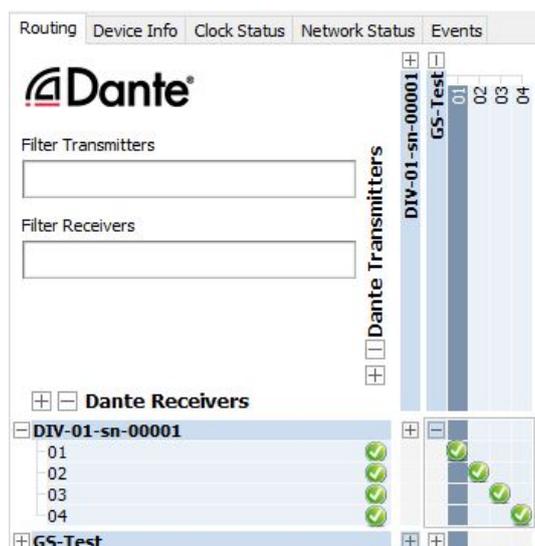
Audio Over IP Network

We strongly recommend that you consider your network topology carefully and would not recommend sharing broadcast audio and general data on the same network.

For more details of audio over IP network structure please visit www.audinate.com

Running Dante Controller

At the time of writing this manual the Dante Controller looks as per the screenshot below:



The Comedia will have been named at the factory during test to allow them to be identified by the Dante® controller.

The format used for the factory name is:

'Comedia-01-sn-XXXXX'

Where 'Comedia-01' refers to the Glensound product i.e. Comedia type 1.

The '-sn-XXXXX' refers to the serial number of the Comedia which can be found printed on the rear label of the unit.

The unit may be renamed in Dante® controller by opening the 'Device view' window and selecting Comedia -01-sn-XXXXX in the drop-down menu. Go to the 'Device Config' tab and change the name with the Rename Device box.

Note if you upload a new DNT file or clear the devices config then the name will change to Comedia -01-xxXxXx whereby the 'X's refer to the devices MAC address.

Dante Controller TIP

If you have never run Dante controller before then make sure that on the bottom left of the Dante controllers' screen 'P' or 'S' is next to a green square as this indicates that it is connected to a network. By clicking 'P' or 'S' a pop up box opens to allow you to set what network interface the controller is using.

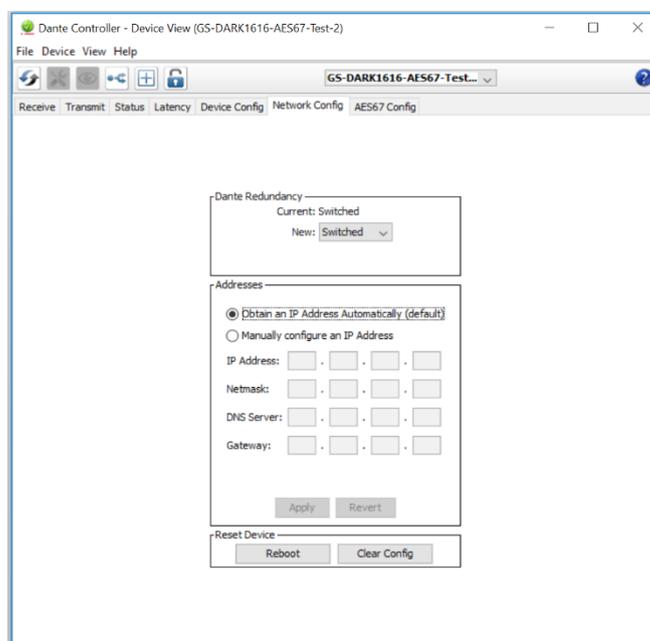
Device not showing up in Dante Controller

If your Dante device does not show up in Dante Controller then the most likely issue is that the device's IP Address is not appropriate for your network.

- A) It maybe that the device is set to obtain an IP address automatically using DHCP (this is the default configuration) and your network is setup for fixed IP addresses only and does not have a DHCP server.
- B) It maybe that the device has had a fixed IP address assigned but that this address is not suitable for your network.

The solution to both scenarios is basically the same.

- 1) You must connect your Dante device directly to the Ethernet port of your computer using an Ethernet cable.
- 2) Make sure that your computer is set to 'Obtain an IP address automatically'
- 3) After a few minutes the Dante device should now appear in Dante Controller.
- 4) Double click the device name to open up device view.
- 5) Open up the 'Network Config' tab
- 6) Either turn on 'Obtain an IP Address Automatically' or correctly configure the 'Manually configure an IP Address' options for your network.
- 7) Click on 'Apply' to confirm the new settings, then disconnect the computer and reconnect the Dante device to your network.



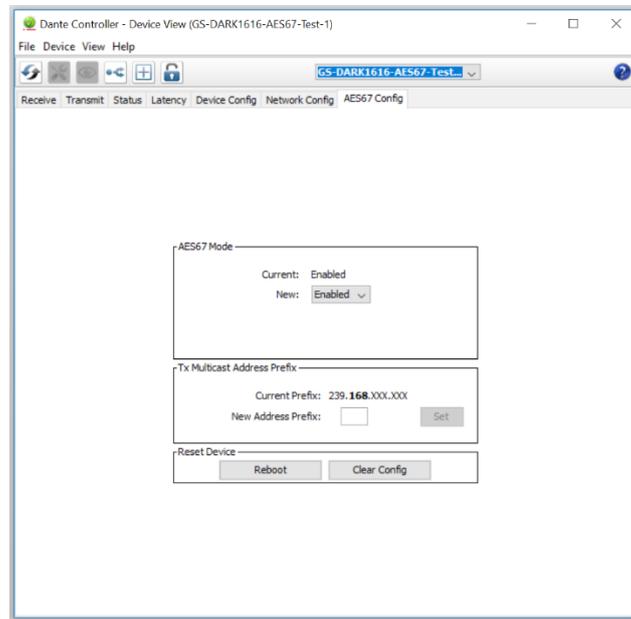
AES67 MODE

The device uses a chipset from Audinate called the Ultimo for its network audio interface. Audinate are the company behind Dante and as such the primary network audio protocol is Dante, however Audinate have enabled their chip to comply with AES67 and therefore the device can be set to AES67 mode for interaction with other AES67 devices.

Please note however that Glensound are relying on Audinate's AES67 interface and are unfortunately not able to provide full AES67 support for the unit. AES67 support should be sought directly from Audinate.

Turning On AES67 Mode

If you want to use your device on an AES67 network and it has not been set to AES67 mode then this can be set in Dante controller by double clicking the Beatrice to open the Device View window where you will find an AES67 tab to enable AES67 support.

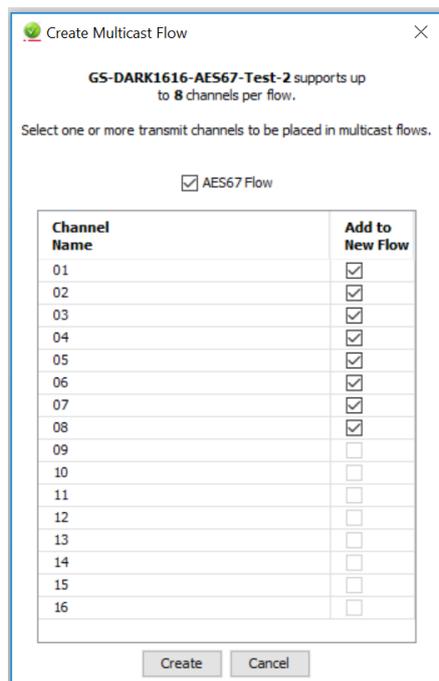


Once the AES67 drop down box has been enabled you'll have to reboot the device for the change to take effect. After the reboot go back to the AES67 tab and set the multicast prefix address to one that is suitable for your network.

Sending AES67 Audio

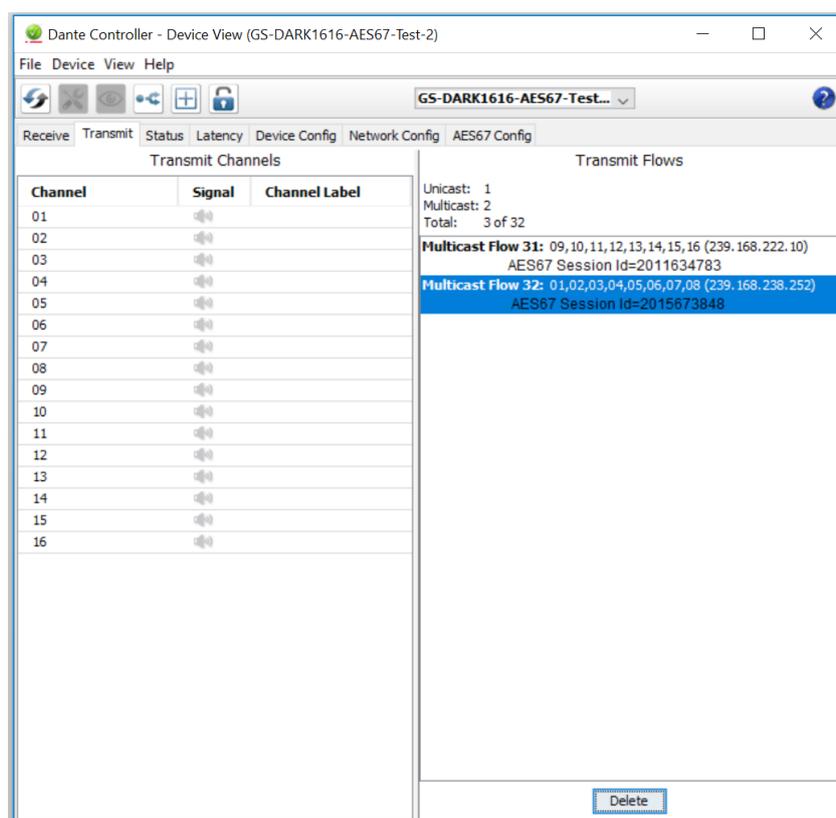
To transmit AES67 audio to the network a multicast flow must first be setup.

This is done by selecting the 'Create New Multicast Flow' Icon  in the Device View.



Tick the AES67 Flow check box, then select channels to be included in the flow then click 'Create'

Once set the flows can be seen in the transmit tab of the device view.



Receiving AES67 Audio

Once a compatible AES67 stream is detected on the network by Dante Controller the AES67 flows will appear in the Dante Transmitters section in the Routing tab.

AES67 Restrictions

AES67 flows can only be generated with the following constraints:

- Multicast Only
- Non-redundant
- Destination address in range 239.nnn.0.0 to 239.nnn.255.255 (239.nnn/16), port 5004
- 48kHz sampling rate
- 24 bit linear (L24) encoding
- 1 msec packet time
- Up to 8 channels per stream

Received AES67 flows have the following constraints:

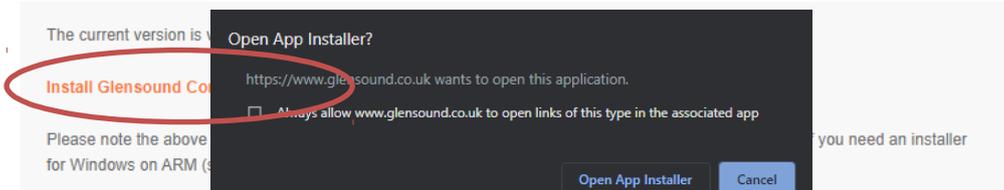
- Multicast Only
- Non-redundant
- Destination address in range 239.nnn.0.0 to 239.nnn.255.255 (239.nnn/16), port 5004. Must match destination address range.
- 48kHz sampling rate
- L16 or L24 encoding
- 125usec, 250usec, 333usec, 1 msec packet time
- Up to 8 channels per stream

GLENSOUND CONTROLLER

GlenSound Controller is a windows 10 application that allows remote control of some GlenSound products over a network. The Comedia has full remote-control functionality and can be operated from a remote location with only a windows PC and access to the network the device is on.

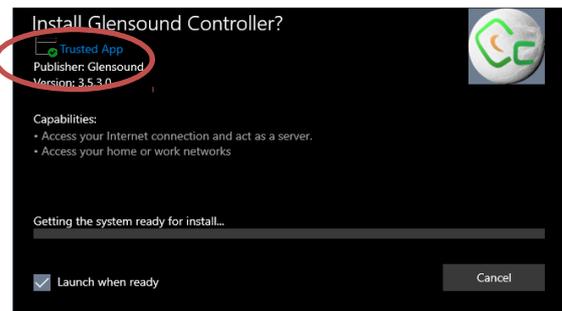
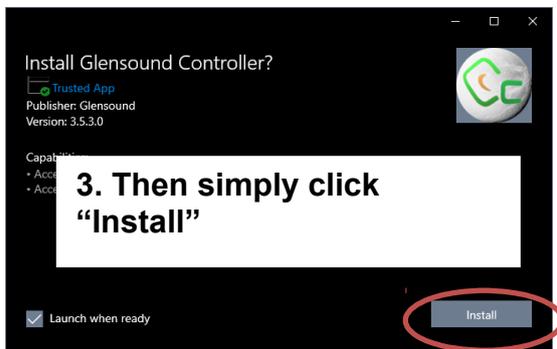
Installing the app

1. To install the latest version of GlenSound Controller go to the latest firmware tab at <https://www.glenSound.co.uk/product-details/glencontroller/> and click on the highlighted orange text "Install GlenSound Controller (latest)".



2. Next click "Open App Installer" if

4. The app will install and open when ready

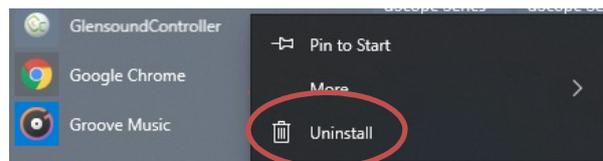


Note:

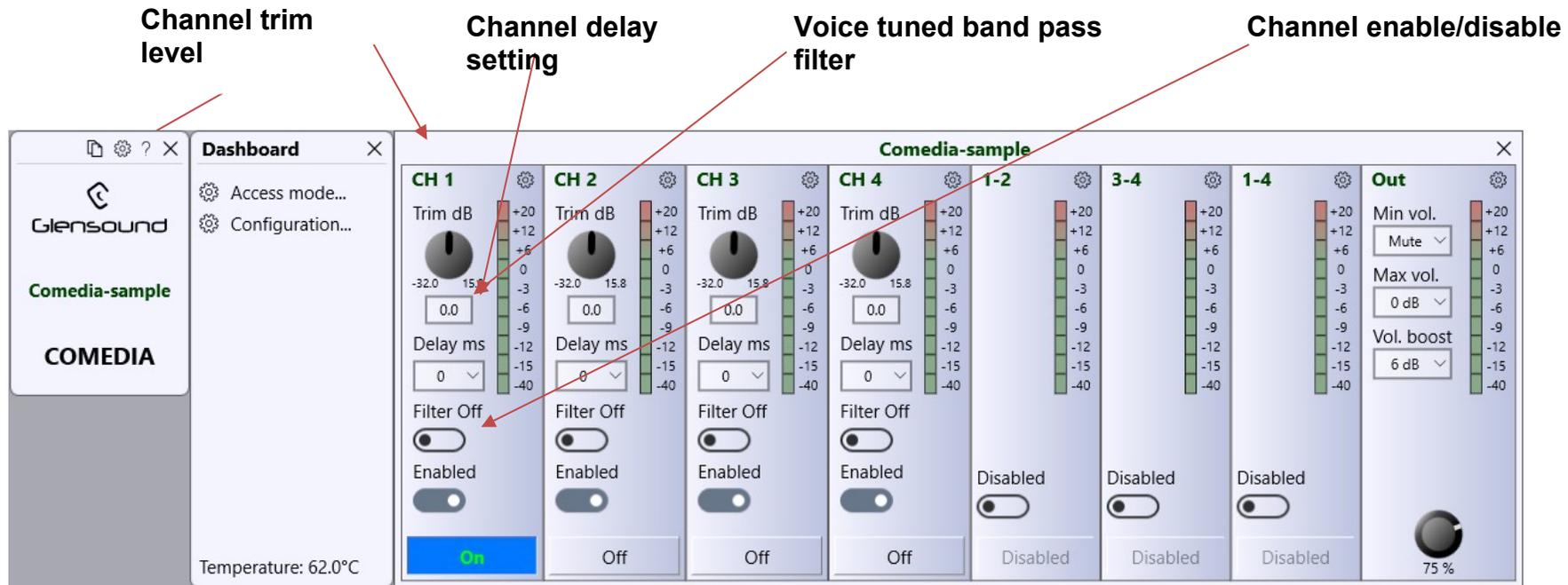
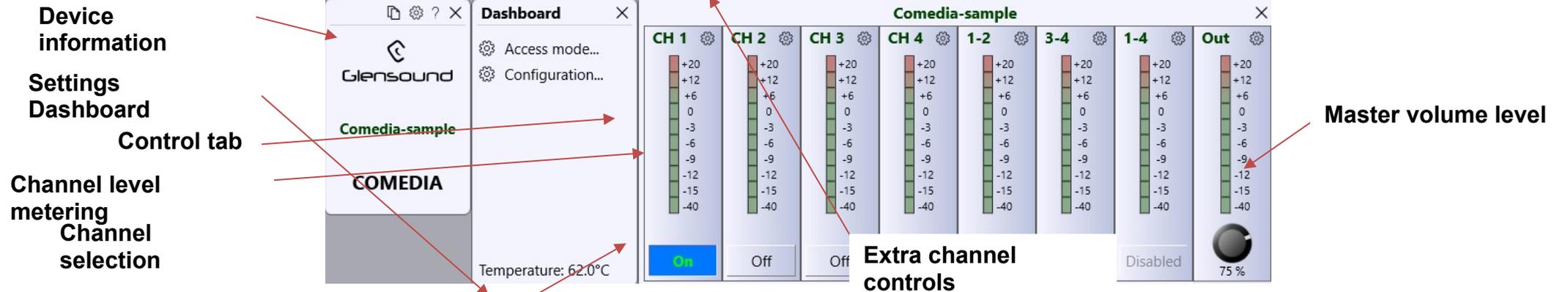
Some windows 10 machines may be required to enable 'sideloading' of programs if it has been disabled by your organization. To enable, go to → **Windows Start** → **Settings** → **Update and Security** → **For developers** → Select '**Sideload apps**'.

Uninstalling the app

To uninstall GlenSound Controller open the windows 10 start menu and find GlenSound Controller, right click and choose "Uninstall".



Using the app with the ComediaThis is the normal device view for the Comedia in Glensound Controller and presents quick access to the device controls.



In priority mode when audio is detected on a priority channel the currently selected channel is dimmed by the dim level and the priority channel is turned on and mixed with the currently selected channel.

The LED of the priority channel will show in red whilst active. After 2 seconds of inactivity the previously selected channel is returned to normal level and the priority channel is muted.

Priority 3 is the highest priority and whichever channel has been set in the priority 3 menu will dim priority 1 and 2 channels (if set)

Enables the front panel source select LEDs to act as simple audio level meters.

Bar: operates like a normal vertical level meter, with increases in level increasing the number of LEDs on.

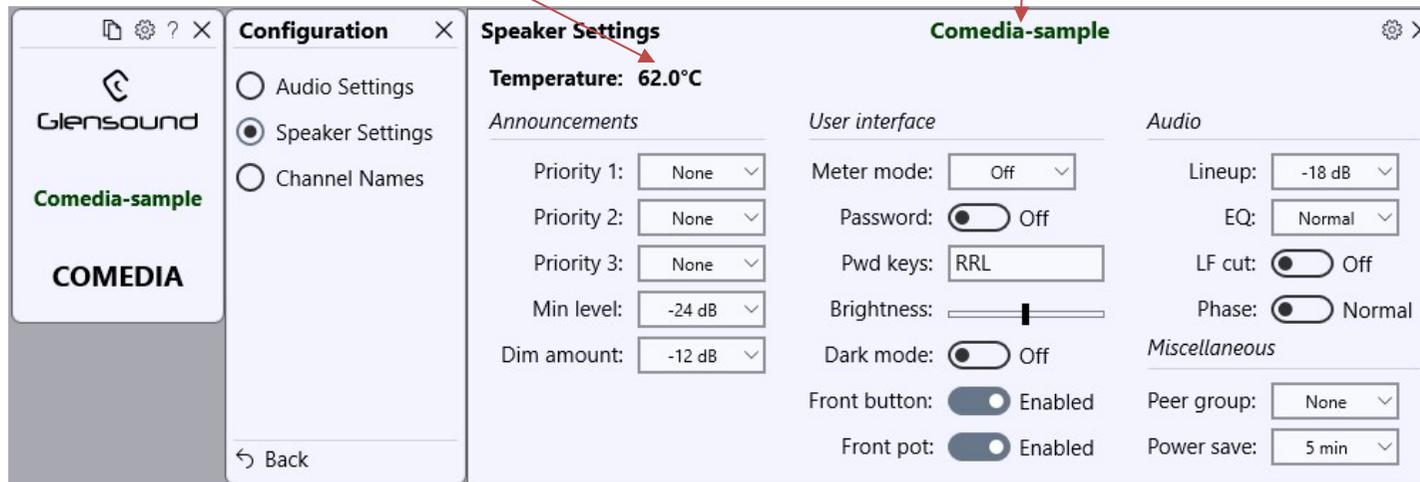
Colour: provides individual meters on each of the single source LEDs, indicating their own source input level. The LED will change colour depending upon the level, starting at blue (off), going through green, amber and then red all at different intensities to indicate the incoming signal level.

Set to factory default options

Set audio line level for incoming audio

Time before the device is powered down to save power when not in use

Go to <https://www.glen sound.co.uk/product-details/glencontroller/> and check the 'Useful Videos' tab for informative YouTube tutorials on how to use other features of Glen sound Controller.



EQ settings with 3 different presets: Off, Natural, Normal, Pop

The LF Cut starts at 200 Hz and rolls off at 12dB per Octave. Allows Comedia's to be grouped together for stereo or multichannel speaker arrangements

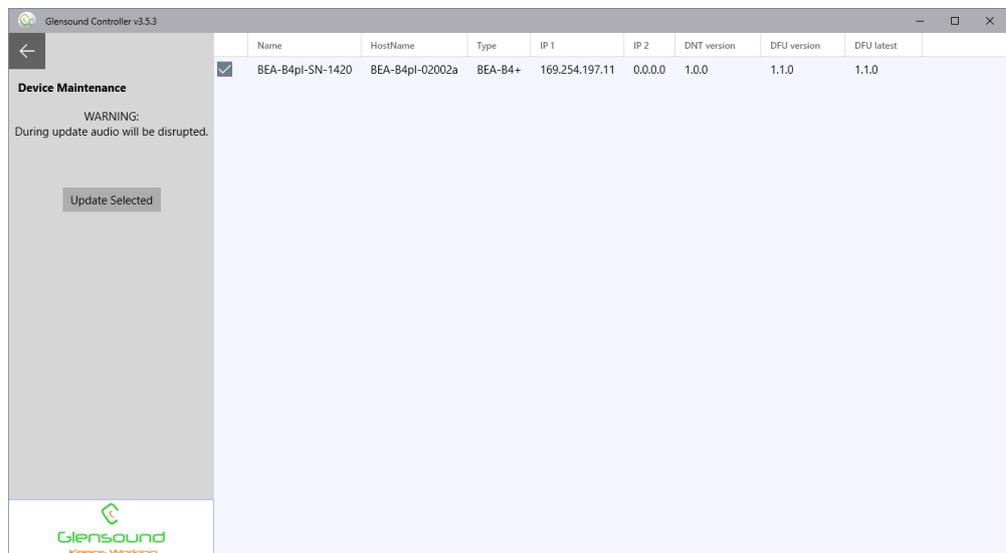
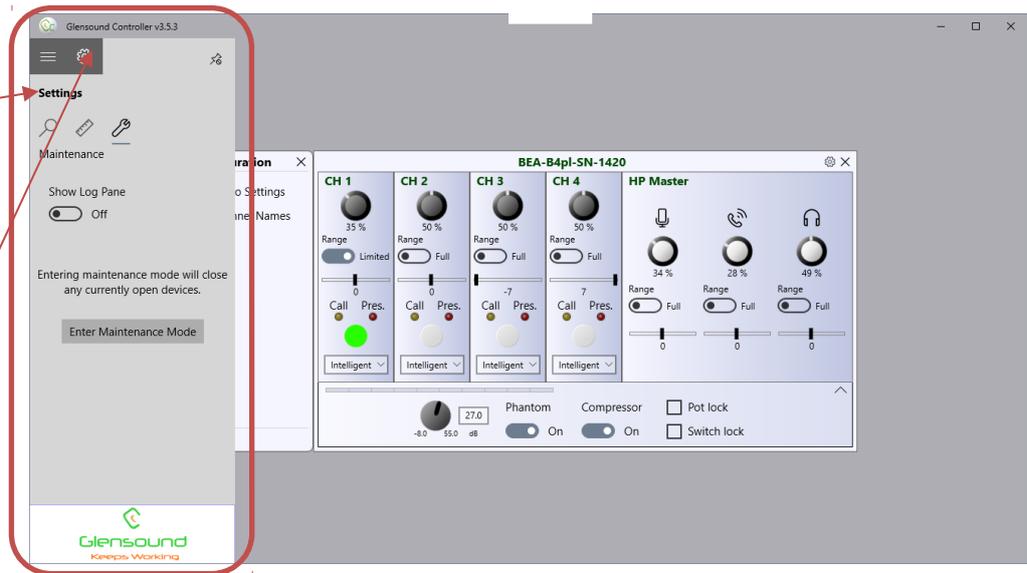
UPDATING FIRMWARE

Instructions

1.

A. Click the sidebar icon to access the sidebar

B. Click the cog icon to open the settings page



2.

3.

Click start to begin updating



4.

Update progression bar



5.

Update finished, device will now restart



UPDATING THE ULTIMO CHIPSET

The Ultimo Chipset is a device supplied by Audinate that does most of the processing for the actual Dante/ AES67 network audio streams. There is one Ultimo Chipset in each Comedia We supply special code (a .dnt file) that sets up/ initiates the Ultimo Chipset and makes it work in particular way that is compatible to the device.

Finding Out Current Installed Version

Using Dante® controller double click on the device name in the routing tab to open the Device View box.

On the Device View box open the Status Tab.

The 'Product Version:' shows the currently installed version of Ultimo Chipset dnt code.

Finding Out What The Latest Available Version Is

Contact GlenSound for the latest firmware version available. sales@glenSound.com

Updating the device

The firmware that runs in the Ultimo Chipset is updated using Audinate's Firmware updating tool. The updating tool and a user guide can be downloaded from Audinate's website:

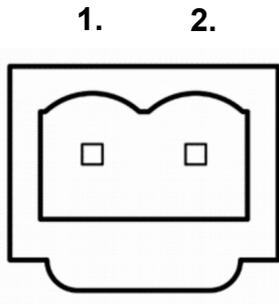
<https://www.audinate.com/products/firmware-update-manager>

NOTE:

Please note we strongly advise that when you do the update that only your PC and the Dante device that you want to update are on the network to save accidentally updating the wrong Dante device.

WIRING INFORMATION

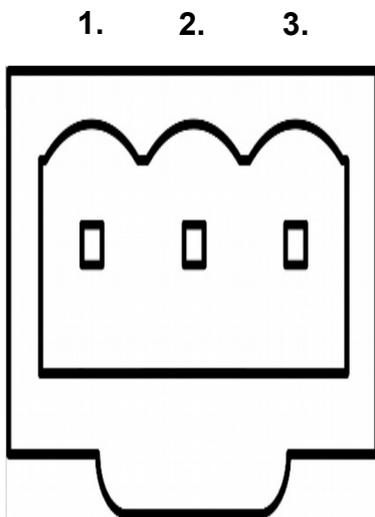
2-Way Terminal Block Wiring



1: SPEAKER INPHASE/ POSITIVE +

2: SPEAKER MATE/ NEGATIVE -

3-Way Terminal Block Wiring



1: Ground/ Earth

2: INPHASE/ POSITIVE +

3: MATE/ NEGATIVE -